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## Self-Modelling for Assessing Governance (SMAG): Guidelines & Report

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# Self-Modelling for Assessing Governance (SMAG)

– Guidelines & Report –



WP T1 Participatory methods for better integration and implementation

Activity A.1.1

Deliverable D.T.1.1.1

Author IRSTEA

SMAG (Self-Modelling for Assessing Governance) is a participatory tool developed by IRSTEA in the frame of the SPARE Project. The objective of this tool is to model and analyse the governance process of a river basin over the past 30 years.

This document is composed of two parts:

- Part 1, including annexes 1 to 5, introduces SMAG guidelines and is destined to SMAG users. It provides the instructions and the support materials that are required for organizing a workshop for 4 to 8 participants.
- Part 2 traces back the evolution of the tool and the modelling choices made. It is targeting internal audiences (SPARE partners and researchers).

***!! IMPORTANT !!***

This version of SMAG is one of the outcomes of the SPARE project. However, this tool is destined to evolve and be improved beyond the project life. Hence, your **feedback** from each SMAG session is essential.

At the end of your SMAG session, please **collect all materials produced by participants**: attendance list, maps, MSDs post-its, timeline, decision analysis tables, individual questionnaires and lessons for the future. You can take **photos** or make copies of them.

**Send copies of all the materials produced during the session** back to Irstea:

>> [sabine.girard@irstea.fr](mailto:sabine.girard@irstea.fr) and [emeline.hassenforder@irstea.fr](mailto:emeline.hassenforder@irstea.fr)

Thank you for your contribution.

## **SPARE - Alpine rivers as society's lifelines**

Rivers are the lifelines of sustainable development in the Alps. They provide clean drinking water for human use and irrigation for agriculture, they are home to a myriad of organisms, they provide recreation opportunities, and their power helps us to produce energy. Alpine streams can only provide these and other services to society if we take care of them, on the basis of comprehensive stream management. The SPARE (Strategic Planning for Alpine River Ecosystems) project aims at contributing to a further harmonization of human use requirements and protection needs. Nine project partners from six Alpine countries show how strategic approaches for the protection and management of streams can be improved across administrative and disciplinary borders, and promote awareness of the services provided by Alpine rivers, as well as their vulnerability. SPARE lasts from December 2015 to December 2018 and is co-financed by the European Regional Development Fund through the Interreg Alpine Space programme.

[www.alpine-space.eu/SPARE](http://www.alpine-space.eu/SPARE)

**CONTENT**

**PART 1 - SMAG PRESENTATION & GUIDELINES..... 5**

    WHAT IS SMAG? ..... 5

    OBJECTIVES..... 5

    PARTICIPANTS ..... 5

    DURATION..... 5

    STEPS..... 5

    EXPECTED OUTPUTS ..... 6

**MATERIAL TO BE PREPARED FOR THE WORKSHOP ..... 6**

**STARTING THE WORKSHOP ..... 6**

**STEP 1: MAP – 30 MIN. .... 7**

    GOAL & EXPECTED RESULT..... 7

    INSTRUCTIONS..... 7

**STEP 2: MOST SIGNIFICANT DECISION (MSD) – 45 MIN. .... 8**

    GOAL & EXPECTED RESULTS..... 8

    INSTRUCTIONS..... 8

**STEP 3: TIMELINE – 75 MIN. .... 9**

    GOAL & EXPECTED RESULT..... 9

    INSTRUCTIONS..... 9

**STEP 4 – DECISION ANALYSIS [OPTIONAL STEP] – 45 MIN. .... 12**

    GOAL & EXPECTED RESULT..... 12

    INSTRUCTIONS..... 12

**STEP 5 - CONCLUSION – 45 MIN. .... 13**

    GOAL & EXPECTED RESULTS..... 13

    INSTRUCTIONS..... 13

**ANNEX 1 – MODEL OF POST-IT FOR MOST SIGNIFICANT DECISION ..... 14**

**ANNEX 2 – MODEL OF TIMELINE ..... 14**

**ANNEX 3 - DECISION ANALYSIS TABLE..... 0**

**ANNEX 4 – INDIVIDUAL QUESTIONNAIRE..... 15**

**ANNEX 5 – LESSONS FOR THE FUTURE..... 18**

<b>PART 2 – REPORT ON THE DEVELOPMENT OF SMAG .....</b>	<b>19</b>
<b>1. SMAG VERSION 1 .....</b>	<b>21</b>
1.1. DESCRIPTION.....	21
1.2. TEST 1 (MONTPELLIER, 24/05/16, ETANG DE THAU, 3 PARTICIPANTS) .....	23
1.3. TEST 2 (MONTPELLIER, 24/05/16, DRÔME, 5 PARTICIPANTS).....	23
1.4. IMPROVEMENTS .....	23
<b>2. SMAG VERSION 2.....</b>	<b>24</b>
2.1. DESCRIPTION.....	24
2.2. TEST 3 (MONTPELLIER, 26/05/16, DRÔME RIVER BASIN, 2 PARTICIPANTS).....	26
2.3. IMPROVEMENTS.....	28
<b>3. SMAG VERSION 3.....</b>	<b>29</b>
3.1 DESCRIPTION .....	29
3.2 TEST 4 (ZERNEZ, 1-2/06/16, ..... INN RIVER BASIN, 12 PARTICIPANTS)	
	29
3.4 IMPROVEMENTS.....	30
<b>4. SMAG VERSION 4.....</b>	<b>31</b>
4.1. DESCRIPTION.....	31
4.2. TEST 5 (ALLEX, 6/07/16, SPARE 4 PCSS, 20 PARTICIPANTS - 4 GROUPS) .....	32
4.3. IMPROVEMENTS .....	34
<b>5. SMAG VERSION 5.....</b>	<b>35</b>
5.1. DESCRIPTION.....	35
5.2. TEST 6 (MONTPELLIER, 25/08/16, LEZ RIVER BASIN, 8 PARTICIPANTS).....	35
5.3. TEST 7 (LINZ, 21/11/16, STEYR RIVER BASIN, 7 PARTICIPANTS).....	35
5.4. TEST 8 (NOVA GORICA, 24/01/17, SOČA RIVER BASIN, 7 PARTICIPANTS).....	37
5.5. ALTER-EAU CONFERENCE (LIMOGES) .....	38
5.6. FUTURE IMPROVEMENTS.....	39

## PART 1 - SMAG presentation & guidelines

### What is SMAG?

SMAG (Self-Modelling for Assessing Governance) is a participatory tool developed by IRSTEA in the frame of the SPARE project. It is designed to be done by participants themselves, autonomously, following these guidelines.

### Objectives

The objective of SMAG is to model and analyse the governance process of a river basin over the past 30 years. It can be used for:

- self-elicitation of key decisions made to manage the river basin and building of a common understanding of the reasons and impacts of these decisions;
- sharing the governance history of the river basin ;
- analysis and recommendations on what could or should be changed in the current and future governance of the river basin.

### Participants

SMAG is designed for 4 to 8 participants. These participants should know the history of the river basin over the past 30 years. A SMAG workshop can be done by participants autonomously. Nevertheless, previous tests of the tool have shown that the tool is easier to use and more efficient if one of the participants read carefully these instructions first, prepare all the material needed and get ready to facilitate the process. The volunteer facilitator should pay attention to guide participants without being overly prescriptive.

### Duration

The duration of a SMAG workshop is about 3 to 4 hours.

### Steps

The SMAG workshop includes 4 steps + 1 optional:

- **Map** : Mapping major spatial changes which took place in the river basin over the past 30 years
- **Most Significant Decisions (MSDs)**: Identifying key decisions in water governance history.
- **Timeline** : Modeling the dynamics which led to and were generated by these MSDs
- [OPTIONAL] **Decision analysis** : for some MSD you would like to analyze in depth, tracking the decision process and identifying the roles of the stakeholders involved
- **Conclusion** : Analyzing the governance process of the river basin over the past 30 years by describing the model and answering questions

## Expected outputs

- **2 to 4 maps** of your river basin : 1 map as it was 30 years ago and 1 to 3 maps representing the evolution of the major elements along time
- **Post-its** identifying and describing decisions which most significantly impacted the governance of your river basin (MSDs)
- **1 timeline poster** modeling the external and local causes and consequences of the Most Significant Decisions and the roles of the main stakeholders involved.
- [OPTIONAL] **1 table** per MSD which details the decision process
- Individual filled **questionnaires** and **1 collective summary** of lessons for the future.

## Material to be prepared for the workshop

- Colored pencils and tracing pencils; adhesive; scissors; small post-its
- Blank paper (size: A4) - 1 per participant + 1 collective
- Tracing paper (size: A4) – 4
- MSDs printed posts-it (annex 1) – 2 copies per participant
- Timeline poster (A0) – 1 copy (annex 2)
- Decision Analysis Scheme (annex 3) – 1 copy
- Guidelines & Questionnaire (annex 4) – 1 copy per participant
- Participants attendance list - 1

## Starting the workshop

1. Read carefully the objectives and main steps of the workshop.
2. Formulate together the spatial boundaries of the target river basin
3. Read the following definition of governance:  
*>> **Water governance** is the set of rules, practices, and processes (formal or not) through which decisions for the management of river ecosystems and water resources are taken and implemented, at different levels of society (adapted from OECD, 2015 & GWP, 2003).*
4. Organize a round table for each participant to briefly present him/herself and his/her expectation(s) about this workshop.



## Step 1: Map – 30 min.

### Goal & expected result

Identifying major spatial changes which took place in the river basin over the past 30 years by drawing several maps.



### Instructions

#### 1. Individually (10 min + 5 min) – Mapping your river basin as it was 30 years ago

(10 min) **Draw a map** of your river basin as it was 30 years ago on a blank paper with coloured pencils. Represent major elements, name and legend them. They could be:

- Natural elements: river and tributaries, river-basin borders, wetlands, groundwater, forest, etc.
- Uses and activities: agriculture, industries, tourism, etc.
- Infrastructures: cities, dams, hydropower plants, etc.
- Socio-political elements: perimeters of organizations, administrative limits, etc.

(5 min) **Display your map** on the board and briefly present it to the group.

#### 2. Collectively (5 min) – Synthetizing maps of your river basin as it was 30 years ago

**Synthetize** maps: you can choose one of them or draw collectively a new one. Everyone must agree with the new single collective map. **Date** the map.

#### 3. Collectively (10 min.) – Mapping the evolution over the past 30 years

Use 1 to 3 tracing papers to **represent the evolution** of the major elements in time. If necessary, use arrows to show dynamics.

**Date** all tracing papers.

**Check** if all major changes have been pointed out.

## Step 2: Most Significant Decision (MSD) – 45 min.

### Goal & expected results

Identifying 2 to 4 Most Significant Decisions in your water governance history and describing the main causes and consequences of these decisions, on the MSD post-it (annex 1).

**>> A *Most Significant Decision* is a LOCAL decision (made by local stakeholders) which concerns your river basin and which most significantly impacted the governance of your river basin**

E.g. of MSD: Stopping bathing in the river, creating a local water committee, etc.

These decisions MAY OR MAY NOT be the causes or consequences of the spatial changes identified in the previous step.



### Instructions

#### 1. Individually (10 min + 10 min) – Listing Most Significant Decisions

(10 min) **Identify the 3 decisions** which most significantly impacted the governance of your river basin. Write each decision on the upper part of the dedicated post-it (annex1) with a date.

(10 min) **Display** your post-its on the wall and **present** them briefly to the group.

#### 2. Collectively (10 min.) – Choosing 2 to 4 main MSDs

**Prioritize** Most Significant Decisions by order of importance (write a number on each post-it: 1 for the most important, etc.).

**Keep the 2 to 4 MSDs** which are the most important in your governance history.

#### 3. Collectively (15 min) – Describing causes and consequences of MSDs

For these 2 to 4 MSDs, **discuss and write** on the lower part of the dedicated post-it (annex 1) the main causes and the main consequences of the decision.

### Step 3: Timeline – 75 min.

#### Goal & expected result

Modelling the dynamics which led to and were generated by the Most Significant Decisions you have identified in the previous step, by completing the dedicated timeline (annex2).

The image shows the SMAG matrix and two photographs of a workshop. The matrix is a grid with a timeline at the top from 1985 to nowadays. It is divided into three main sections: External context, Governance, and Local context. The External context section includes Technology, Social & Economy, Policy, and Climate & natural hazards. The Governance section includes Most Significant Decisions and Stakeholders. The Local context section includes River, ecosystems & nature; Institutions, policy & politics; Social & culture; Water and land uses & activities; Infrastructures; and Information. The top photograph shows a group of people in a meeting room with a whiteboard displaying a timeline. The bottom photograph shows a close-up of the SMAG matrix with yellow sticky notes placed on it, illustrating the use of the tool.

#### Instructions

##### 1. Collectively (5 min) - Placing MSDs in chronological order

**Place** the 2 to 4 MSDs selected on the matrix in chronological order in the middle part of the matrix timeline (don't care about time scale).

##### 2. Collectively (35 min) – Representing external and local context and causal links

**Report** the name of the causes or consequences of the MSDS on small post-its with their dates (which can be approximate) and **stick them in the appropriate line** and in the right **chronological order** of the top and bottom parts of the matrix.

The matrix allows sorting elements according to several categories of external and local context (Table1).

**>> External context** covers all events or dynamics which do not depend on actions or decisions of stakeholders of the river basin; for example: availability of new

technologies, modification of European or national policies, social or economic evolution, climate change, etc.

>> **Local context** covers all events or dynamics on which stakeholders of the river basin can act ; for example : state of natural resources or ecosystem, local rules and policy, water and land uses and activities, infrastructures, etc.

Be careful of the chronological order between all the elements. If needed, you can use lines to represent changes which last in time.

**Add** as many causes or consequences you want.

External context /uncontrolled	Examples
Technology	Innovative techniques or equipment, etc.
Social & economy	Demography, employment, price of agricultural commodities, etc.
Policy	EU directives, national laws, regional planning documents, etc.
Climate & natural hazards	Change in rainfall or temperature; floods or droughts hazards, etc.
Local context /controlled	Examples
River, ecosystems & nature	Water quantity or quality, biodiversity, wetlands, forest, etc.
Institutions, policy & politics	Stakeholders' organizations, political orientations, local rules, local plans, etc.
Social	Culture, representations, norms, etc.
Water & land uses and activities	Agriculture, industries, tourism, etc.
Infrastructures	Monitoring apparatus, dam, hydropower plant, etc.
Information	Knowledge provision, models, decision tools

Table 1 - Legend Caption for for elements of the local and external context

**Represent** the causal links between these elements and MSDs with arrows, using the legend below (Table 2). Be careful, arrows cannot point out to the past.

Causal links	Examples	Symbol
Positive	Same trend / effect	+ →
Negative	Opposite trend / effect	- →
Neutral		→

**Table 2 - Caption for causal links**

**3. Collectively (25 min) – Identifying main stakeholders and their roles**

**List** major stakeholders involved in each MSD in the middle part of the matrix.

A stakeholder can be single person (ex: the president of ...), a group of persons (ex: farmers, inhabitants,) or an organization (ex: a water company...). You can organize them according to their scale of action/decision (national/ regional / local).

**Detail the role(s)** of each stakeholder by using the legend below (Table 3). A stakeholder can have several roles (ex: one can be both manager and main contributor; another one can be both participant and impacted).

Role that each stakeholder can take in MSDs	Description of the role	Symbol
Manager	Organizes or facilitates the decision process	□
Main contributor	Has a strong influence on the process (by providing legitimacy, human, financial or technical means, etc.) OR on the final decision (by choosing options, making the decision or strongly influencing it).	○ text [Precision on the type of contribution]
Participant	Participates in the decision process with little influence on the final decision: collects information, expresses opinion, proposes options, etc.	●
Opponent	Disagrees, challenges, contests the decision process or result	×
Impacted	Is strongly affected by (or dependent on) the decision made (positive / negative manner)	◇+ / ◇-
Absent	Not present in the decision process but could /should have been	∅

**Table 3 – Roles of stakeholders in a MSD**

**4. Collectively (10 min)– Finalizing the timeline**

**Have a look** at your whole timeline.

If needed and if you have enough time, **complete** some context elements, MSDs, stakeholders or causal links in order to improve the understanding of the governance process of your river basin.

## Step 4 – Decision analysis [OPTIONAL STEP] – 45 min.

### Goal & expected result

For one selected MSD, describe more precisely the steps of the decision process and identify the role of stakeholders in these steps.

### Instructions

#### 1. Collectively – Identifying the main steps of the decision process

**Choose** the MSD which you would like to analyse in depth

**Identify the main steps** of the decision process which led to the MSD, using the Decision analysis Table (Annex 3). Read the potential following steps of a decision process and **indicate with a cross** which ones occurred in your case on the first line of the Table.

*List of the potential steps of a decision process (no chronological order):*

**>> Design the decision process** - *Discussing the roles and rights of various actors in making decisions about the river*

**>> Make a diagnosis** - *Describing and understanding the current situation of the river*

**>> Make a prospective/simulation** - *Exploring possible future scenarios for the river*

**>> Define objectives** - *Defining objectives, preferences and constraints for the river*

**>> Identify actions & plans** - *Inventing, identifying and structuring possible actions and plans for the river*

**>> Chose actions & plans** - *Prioritising, voting and choosing among possible river management actions and plans*

**>> Implement** - *Implementing selected actions, plans or policies*

**>> Monitor & evaluate** - *Monitoring and evaluating actions, plans, policies, decisions and their impacts*

#### 2. Collectively – Identifying the role of stakeholders in each steps

**List** the main stakeholders involved in the decision process in the first column of the Table.

For each step of the decision process, **detail the roles** of the stakeholder using the legend in the Table above Annex 3: was he/she a manager, a main contributor, a participant or an opponent? Was he/she absent whereas he/she could /should have been present?

**Discuss** collectively the results by comparing what occurred and what you think should /could have been done, regarding the steps of the decision process and the roles of the stakeholders.

## Step 5 - Conclusion – 45 min.

### Goal & expected results

Analysing the governance process of the river basin over the past 30 years by answering individual questions and collectively discussing lessons for the future.



### Instructions

1. *Individually (15 min.)* – **Filling in the questionnaire**

**Answer** the questions of Annex 4.

2. *Collectively (30 min.)* - **Discussing about learning and future governance**

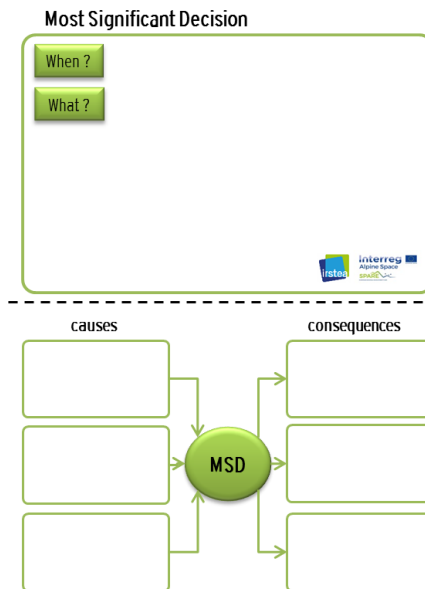
**Compare** your answers.

**Discuss** about the lessons you can draw for future governance.

**Fill** in Annex 5 noting the main elements of your discussion.

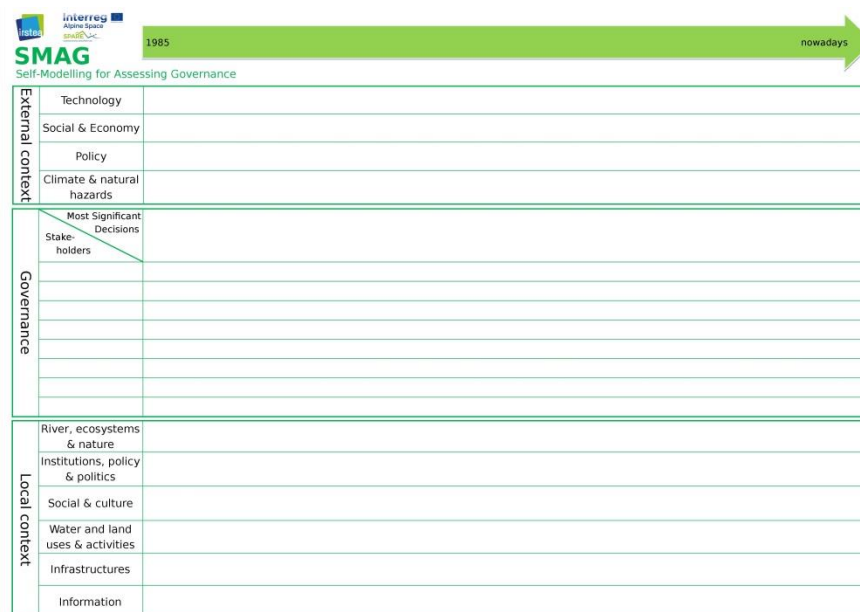
## Annex 1 – Model of post-it for Most Significant Decision

Print the file “Annex1\_MDS.pdf” on A4 paper and cut it in 4 parts.



## Annex 2 – Model of Timeline

Print the file “Annex2\_timeline.pdf” on 4\* A3 papers and stick them together









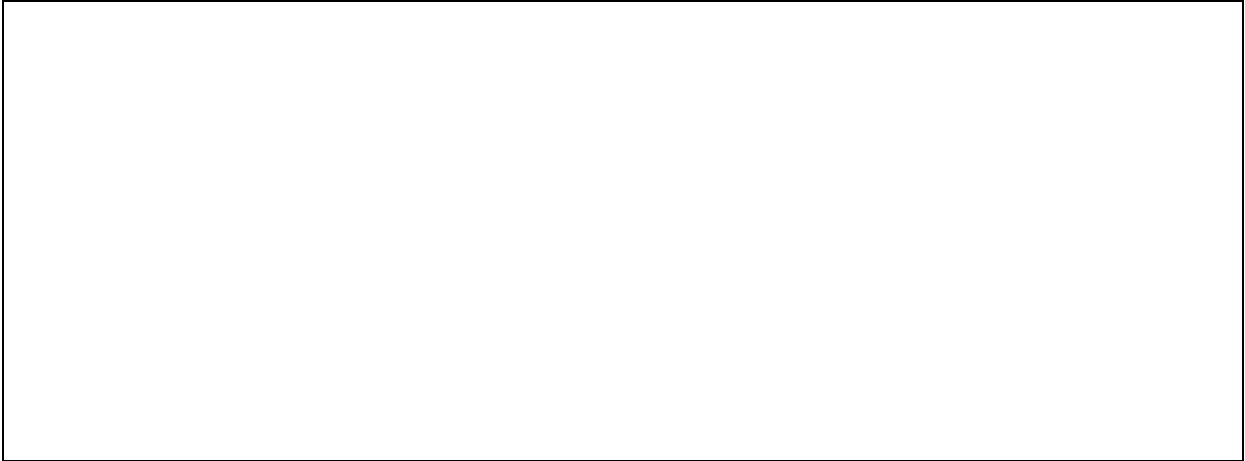
## Annex 4 – Individual questionnaire

Your name: .....

1. Following the workshop, if you had to tell the **story of the governance** of your river basin over the past 30 years to someone who doesn't know it, what would you say? Write a few sentences describing the main changes, decisions and stakeholders involved and also the causal links between them.

2. Looking at the past, what could have been done better and why has it not been so?


3. Which issues / topics haven't been taken into account in the governance of the river basin and should have been included?

A large, empty rectangular box with a thin black border, intended for the user to write their answer to question 3.

4. Who and what has governed the main changes/ decisions?

A large, empty rectangular box with a thin black border, intended for the user to write their answer to question 4.

5. What have been the main conflicts and how could they have been avoided?

A large, empty rectangular box with a thin black border, intended for the user to write their answer to question 5.

6. Are there some important elements to explain the governance process of the river basin which you did not represent on the maps or timeline? Describe them shortly

7. What do you think about this workshop?

- very useful   
  useful   
  useless   
  very useless   
  I don't know

8. Give your opinion on the different

Steps of SMAG	Appraisal -3 → +3	“Pros”	“Cons”	Comments, questions, requests, needs, follow-ups
Map				
MSD				
Timeline				
[Optional] Decision Analysis				
Conclusion				

9. Do you have any suggestion to improve the workshop?

<< end of individual questionnaire. Thank you for your participation. >>

## Annex 5 – Lessons for the future

Collectively - **Note** the main elements of your discussion about the lessons for the future of the governance of your river basin, regarding:

- what could have been done better?
- issues/topics that should be re-included in the water management? By whom? How?
- the governance of the main changes and decisions
- the conflicts that could have been avoided

A large, empty rectangular box with a thin black border, occupying the lower half of the page. It is intended for the user to write their notes on the lessons for the future of river basin governance.

## PART 2 – Report on the development of SMAG

This version of SMAG was mainly developed by Anaïs BAZI and her supervisors during her internship with IRSTEA in summer 2016. An initial literature review on governance and decision-making theory allowed the initial framing of the tool. More specific references about each step are listed in Table 4.

Step	Bibliography
Map	(Caron and Cheylan, 2005), (Bonin et al., 2001)
Most Significant Decisions	(Davies and Dart, 2005)
Timeline	(Mendez, 2010), (Chabrat, 2014), (Bergeret et al., 2015)

Table 4: Detailed references for each step of SMAG

Several versions of SMAG were developed and improved following a series of tests. Six tests were made prior to this version of SMAG (Table 5):

Test	Date	Location of the test	Targeted river basin	Nb. of participants
<b>SMAG Version 1</b>				
1	24/05/16	Montpellier (France)	Etang de Thau	3
2	24/05/16	Montpellier (France)	Drôme river basin	5
<b>SMAG Version 2</b>				
3	26/05/16	Montpellier (France)	Drôme river basin	2
<b>SMAG Version 3</b>				
4	1-2/06/16	Zernez (Swiss)	Inn river basin	12
<b>SMAG Version 4</b>				
5	6/07/16	Allex (France)	SPARE 4 PCSs	20 (4 groups)
<b>SMAG Version 5 (current version)</b>				
6	25/08/16	Montpellier (France)	Lez river basin	8
7	21/11/16	Linz (Austria)	Steyr river basin	7
8	24/01/17	Nova Gorica (Slovenia)	Soča river basin	7

Table 5 – Tests made to develop the current version of SMAG

SMAG was also presented at the Alter-Eau conference in Limoges (France) on 17-18 Nov 2016. Feedbacks from tests 6 to 8 and from this conference are presented in the last section

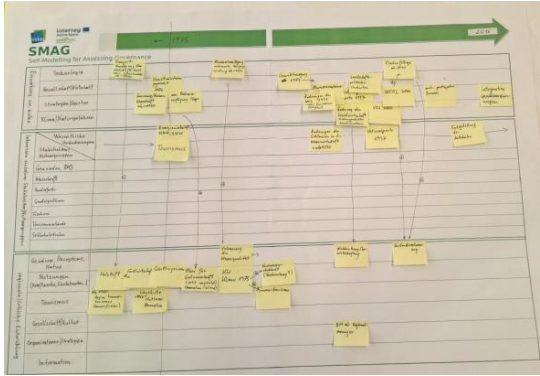
of this document. The following paragraphs present the evolution of the SMAG versions following the five initial tests.



**Test 6 – Montpellier (France)**



**Test 7 - Linz (Austria)**



**SMAG Timeline from Test 7**



**Test 8 - Nova Gorica (Slovenia)**

# 1. SMAG Version 1

## 1.1. Description

Following a process-based approach, ingredients, drivers and sequences describe dynamics of **most-significant changes** on a timeline.

SMAG V1 aims to ask stakeholders to represent their river management on a poster in 4 hours: “The goal is to represent your perception of governance process and to create a common vision of its evolution. It will open discussion amongst you to improve the governance process in the future.”

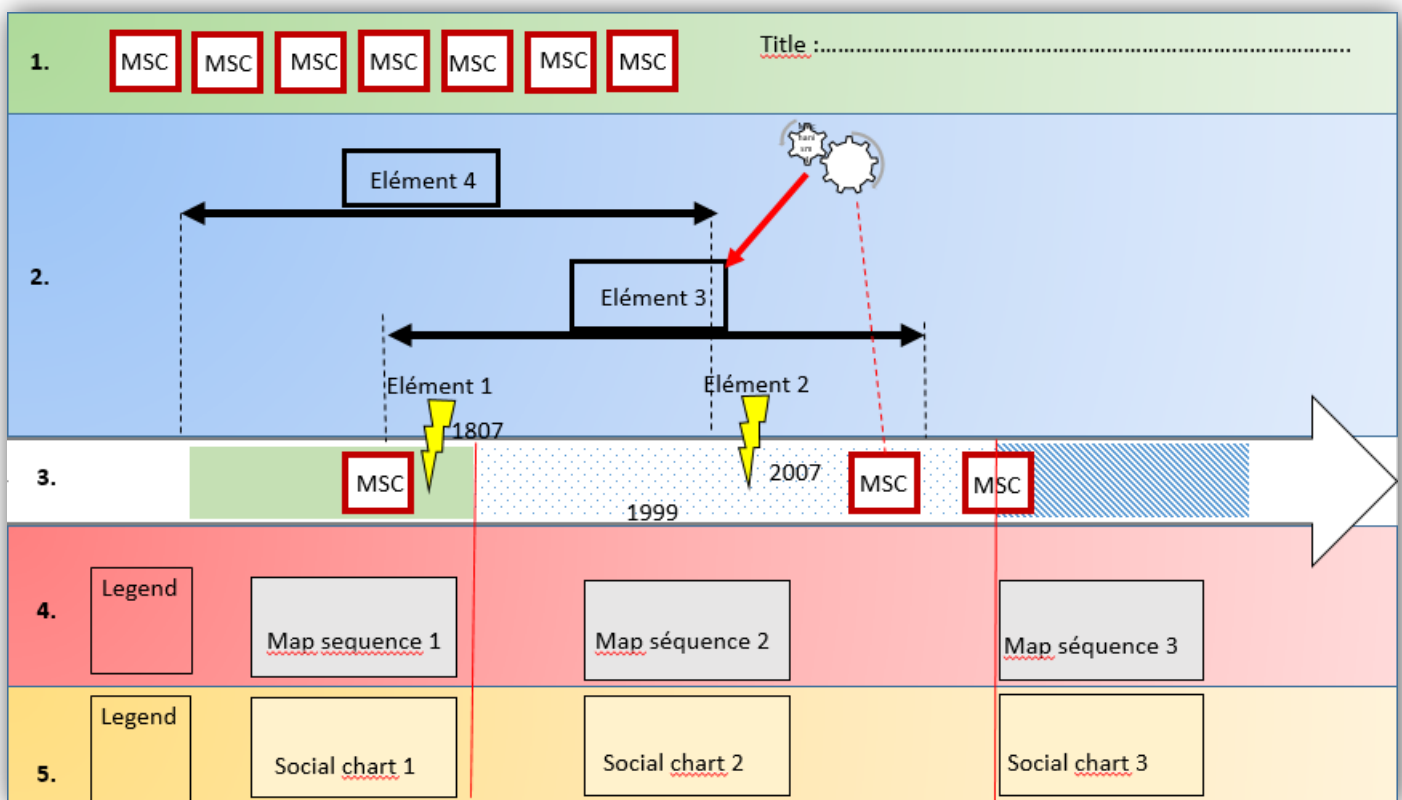
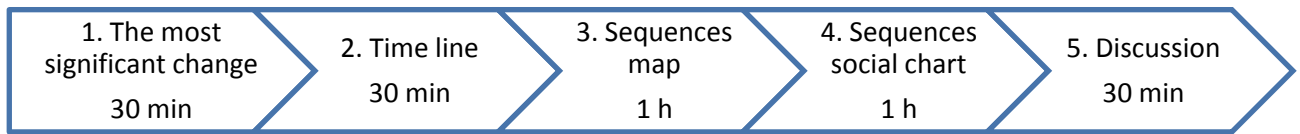


Figure 1: Expected results of SMAG V1

The **facilitator** is one participant. The facilitator changes for each step. At the beginning participants choose a rule for this change.



SMAG includes **5 steps**:



**STEP 1** - Participants must select (the) most significant change(s) in their management process. The question is: “**During last years what is the most important change in the river management process? (In your opinion)**” It could be something you have lived or not, something you have seen or not. It could be a positive or a negative change. They can propose MSC (Most Significant Change) individually or collectively. It depends of the number of participants. They chose collectively one or more MSC and put it on the poster.

**STEP 2** - Participants must represent their river management process on a timeline:

- Proposition of elements which act on the management river process.  
There is 2 typologies of element: external and internal or public policy, local practice and environmental dynamic Participants can choose one of them and propose element to the facilitator. They add it on the timeline. They represent when elements appear and disappear with arrow.
- Separate timeline in sequences  
Sequences are periods until elements organised in the same setting.
- Identify drivers  
Drivers are causes of change. Participant add driver labels on the timeline.

**STEP 3** - Participants draw collectively maps on a blank sheet to describe their vision of river management process for all sequences. They start with “permanent” elements (for a scale of time of a few years) like cities, river and catchment boundaries. When they are agree on a map, they make copies and draw other elements. They create one map per sequence. There is one map for one table and participants turn around table to complete maps.

**STEP 4** - Participant create a social chart per sequence for modelling stakeholder’s behaviour and relationship’s.

**STEP 5** - The last step is just a time to discuss about the poster and the workshop. At the end, participants must complete an appraisal.

## **1.2. Test 1 (Montpellier, 24/05/16, Etang de Thau, 3 participants)**

The targeted river basin was “étang de Thau”. There were 2 participants and one facilitator for all the workshop. In 4 hours, participants did not finished the workshop. They stopped on the second step because the timeline was hard to understand. They stopped the workshop to discuss about aims and method. Sequences maps and sequences social chart was a subject of discussion but not realised.

### **Feedbacks from participants:**

- In general instructions must be clarified. The aim of the workshop is not clear.
- The first exercise seems interesting. Definition of MSC must be clarified. Is it a sudden change or a long term change? Long term change could be represented in this way? If change is in a long term period, do we need date on it? Size of label limits expression of participants and visibility on the board.
- The timeline is too complicated for be understood in 30 minutes.

## **1.3. Test 2 (Montpellier, 24/05/16, Drôme, 5 participants)**

The targeted river basin was Drôme. The second session was the same day than the first one so SMAG method and process could not be improved between those two workshops. Participants stopped on the fourth step (social mapping) because they needed more time. They stopped a lot of time to discuss about method and aims of the workshop.

### **Feedbacks from participants:**

- There was the same reflexion about need of clarify aims and instructions.
- During this session, the new needs was a background map which should help participant to represent their catchment. Without it, they distort reality.
- The workshop wastes time with concepts and difficult exercises which could be simplified.

## **1.4. Improvements**

- MSC could be a sudden or a long term change. To encourage participation, date on MSC is not mandatory but chronological order must be respected.
- The timeline must be simplified. Elements proposed must be integrated in line under the arrow of time. More example must be proposed to save time and boost brainstorming of participants. The word “drivers” must disappear. Participants can be asked about causes and consequences.
- The workshop should start with the mapping exercise because it is the easier and I is a good way to share a common vision of territory. The background map will be used to save time.

## 2. SMAG Version 2

### 2.1. Description

The instruction to participant is still: “In 4 hours, you are going to make a poster to represent water management in your alpine catchment.”

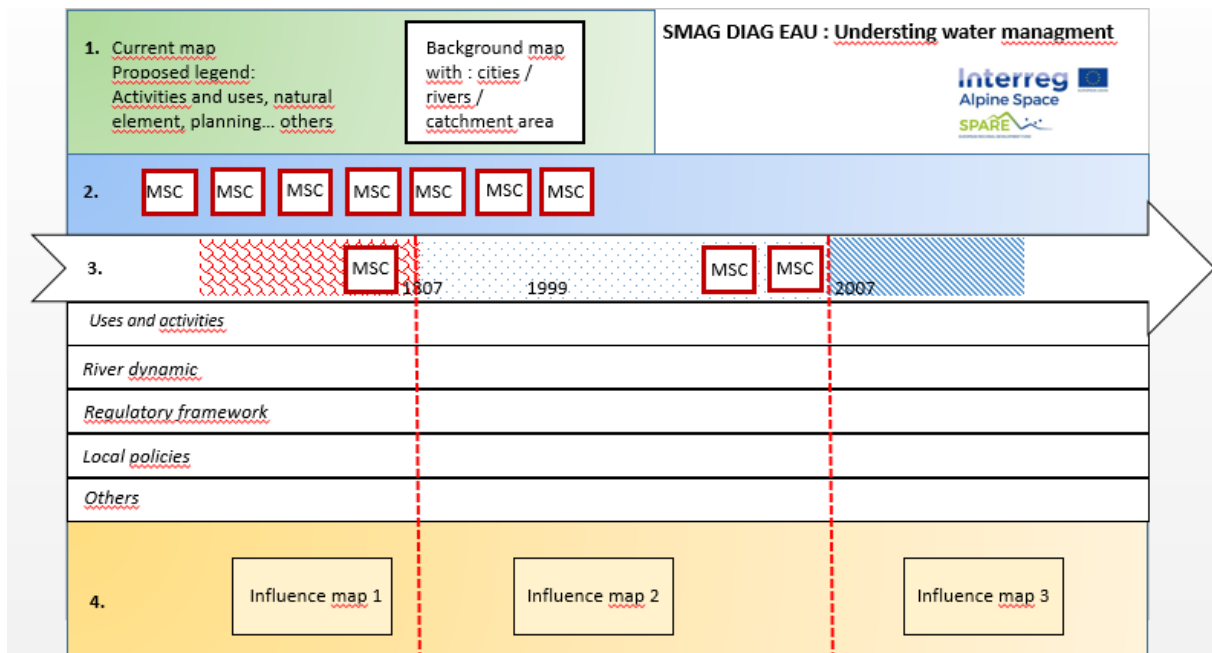


Figure 2 : Expected results of SMAG V2

SMAG 2 includes **4 steps**:



**STEP 1 - Current map which shows all important elements to understand water management.** participants must add labels of elements on a background map spatial elements to tell their governance story. With tracing paper, they represent evolution of elements. There are 3 time in this step:

- Each participant draws a map of current situation and present it to the group.
- The facilitator follow a method to synthetize individual maps of current situation.
- With this collective map of current situation as a background, group add arrow with date to represent changes.

**STEP 2 - list of MSC (Most Significant Changes) which represents important changes in your catchment** (same MSC step than in SMAG Version 1).

**STEP 3 - Timeline which permits to observe different elements like uses and activities or local practises. It could be cut in sequences between 2 and 5. (NEW).**

Typologies of elements are proposed: uses and activities, river dynamic, regulatory framework, local policies and others. The new goal is: "You must represent different dynamics in your timeline: uses and activities (e.g. agricultural practice), river dynamic (e.g. water quality), regulatory framework (e.g. E.U. directive), local policies (e.g. fishing restriction) and other." A grammar must be used to represent changes for each elements. Causal link between elements must be represented on the timeline.



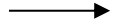


Element type	Legend
Punctual event	*
Process or dynamic which lasts in time	
Increasing element	
Stable element	
Decreasing element	
Causal link	

Table 6 : Caption for SMAG V2

**STEP 4 - Social representation of stakeholders and their relationships during sequences.** The fourth step is an influence map. It aims to model relationships among the stakeholders during one sequence. Participant must realize a list of stakeholders and place them on a chart influence vs interest.

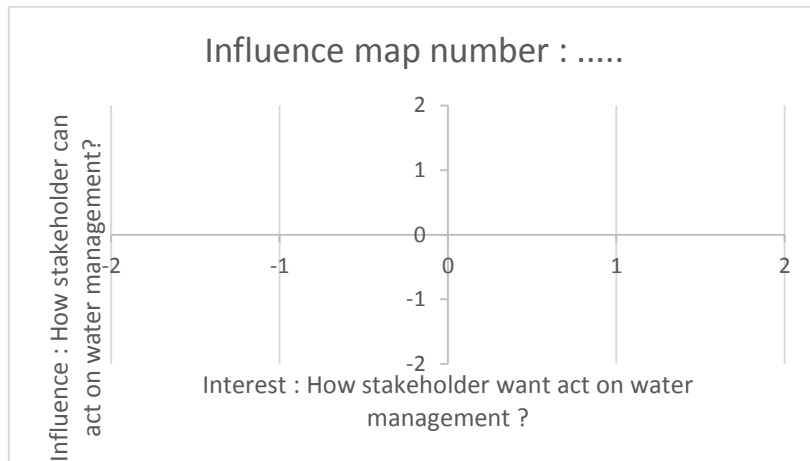


Figure 3 : Social chart SMAG V2

### 2.2. Test 3 (Montpellier, 26/05/16, Drôme river basin, 2 participants)

Only 2 participants tested SMAG 2 and one of them was facilitator. In 4 hours they were able to finish the workshop. The poster was drawn on a board.

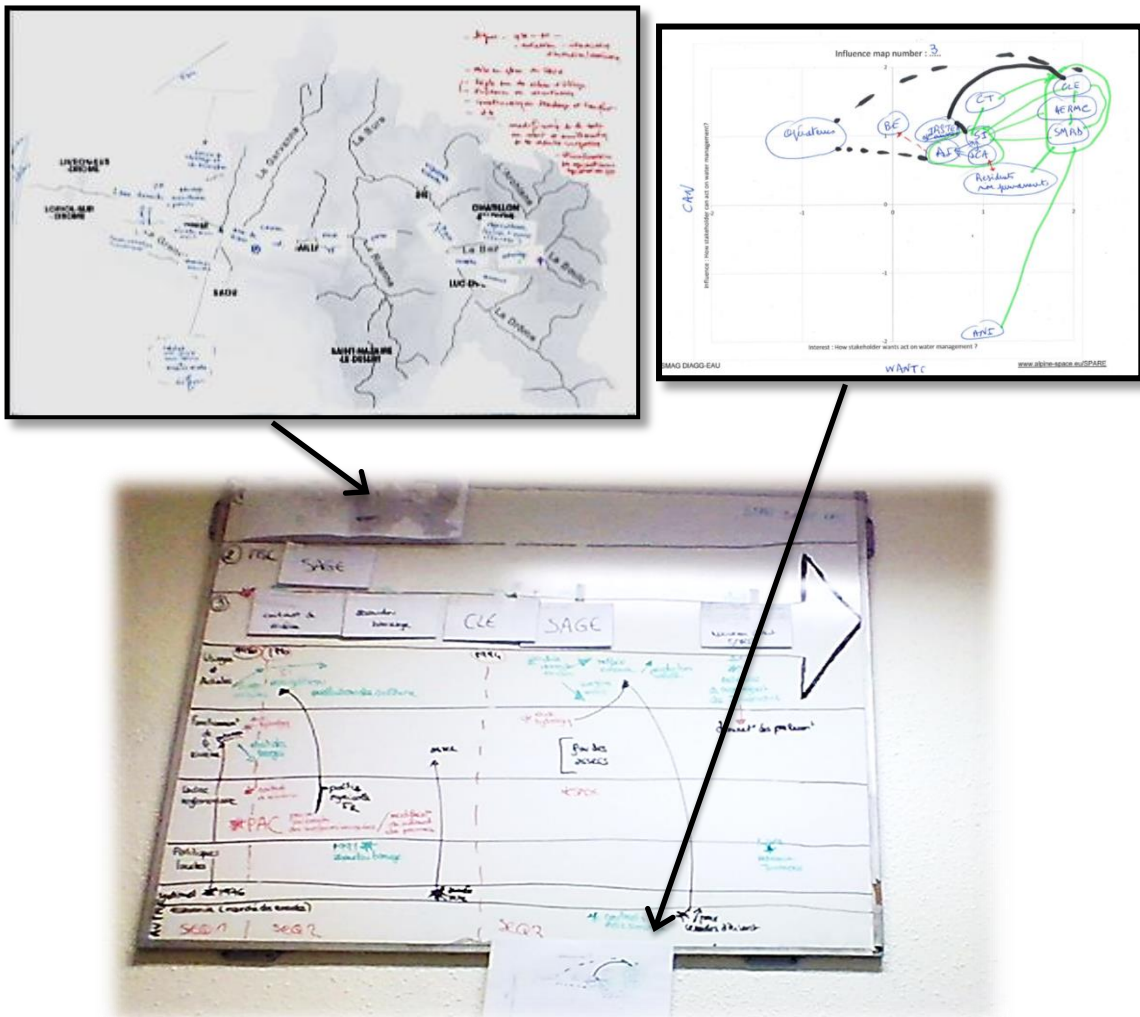


Figure 4: Results of test 3

### **Feedbacks from participants:**

- One question was: “How could we represent a diffuse element on the map with labels?”
- Participant propose a lot of examples for improve the timeline. He asks to add a new typology with climate and economy.
- The social chart seems really hard to understand and do. The result is hard to read quickly.
- Participant make general remarks about organisation and presentation of workshop.

### **2.3. Improvements**

- The background map should be proposed. It could help stakeholders who are not comfortable with drawing. It represents a problem of preparation with a need to find it and print it. Distortions with the blank page are not a problem. Participants must represent their own vision of their catchment and express a point of view. They will mix it and create a common vision.
- Drawing element is the best way to represent it. Label can't modelling diffuse element and are a wasting time in preparation of workshop.
- Sequences are a problem to represent social and spatial dimension. Modelling changes with a few picture of given point is not the good way.

### 3. SMAG Version 3

#### 3.1 Description

SMAG V3 includes 3 steps:

- Mapping which is the same than the previous version
- MSC does not change either.
- Timeline changes to include the social dimension. Participants must represent relationships among stakeholders with a legend.

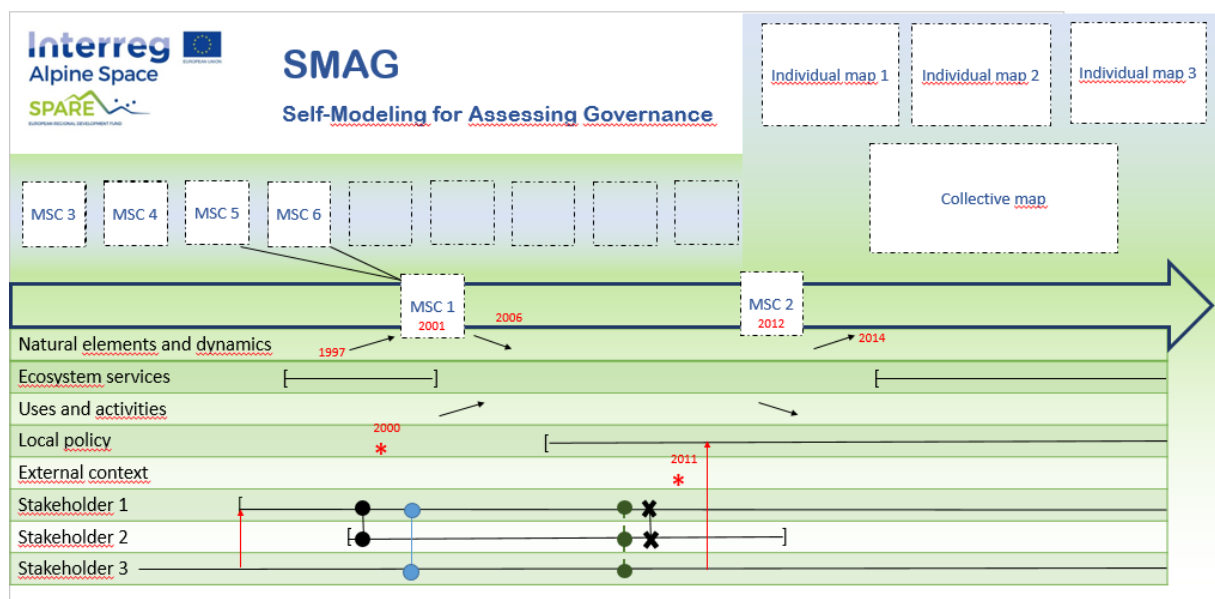


Figure 5 : Expected results of SMAG V4

#### 3.2 Test 4 (Zernez, 1-2/06/16, Inn river basin, 12 participants)

Workshop SMAG 4 realized in Swiss the first and the second of June 2016. Nils Ferrand was the facilitator. There were 12 participants. Next figures present results of this session.

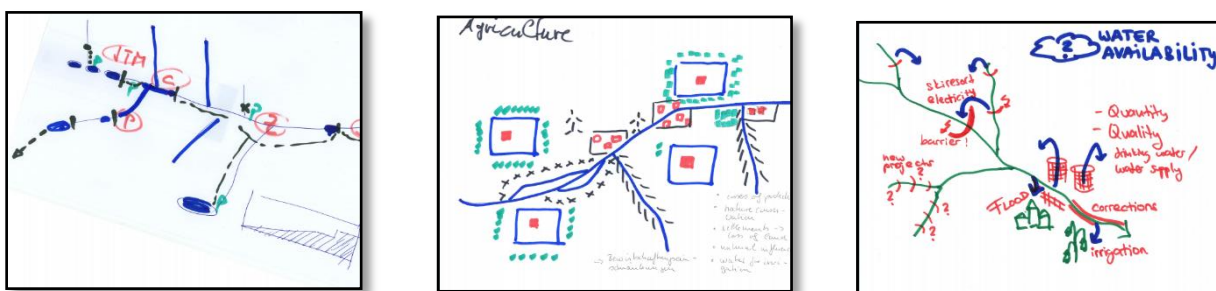


Figure 6 : Results of mapping SMAG V4



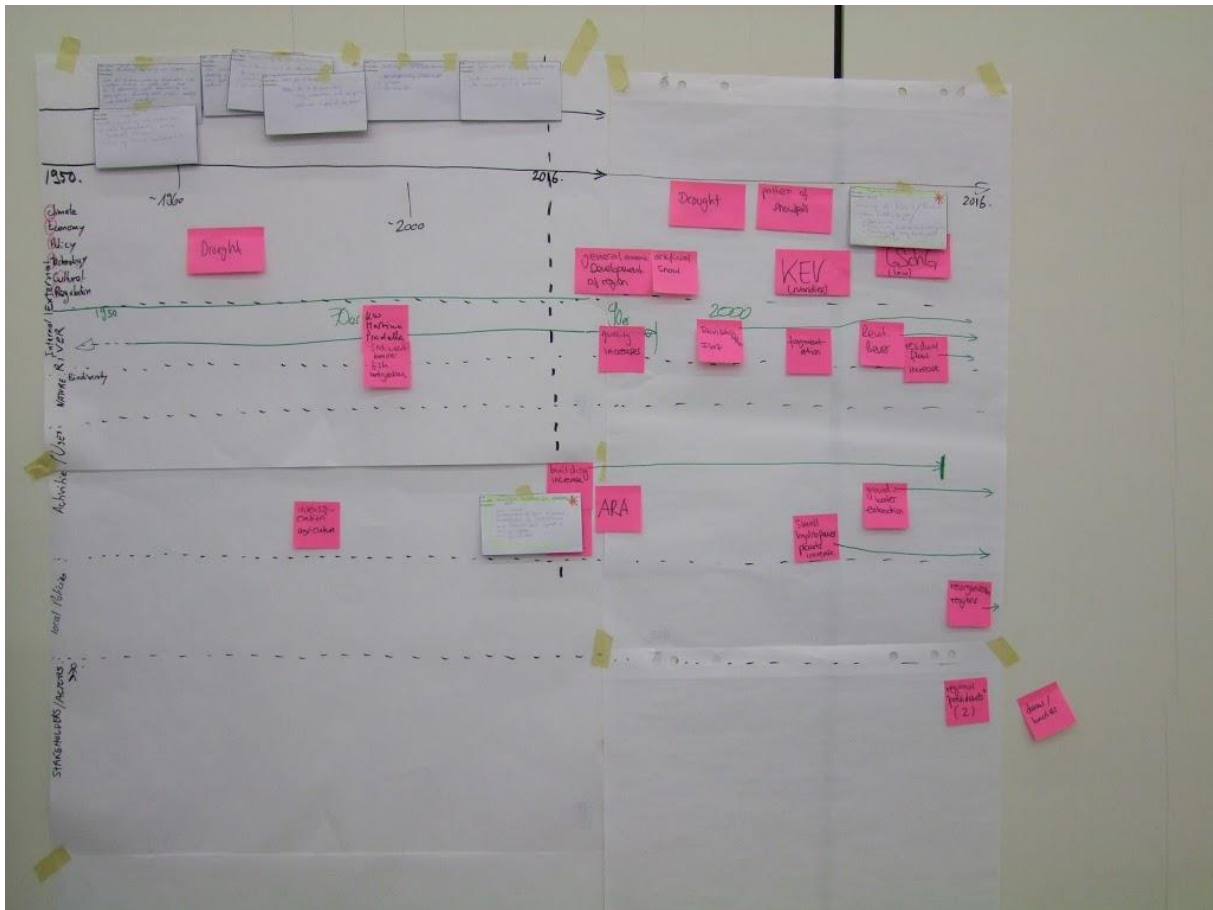


Figure 7 : Timeline result SMAG 4

**Feedbacks from participants:**

...

**3.4 Improvements**

- Separate elements in the timeline in function of scale
- Define stakeholder: institutional or not.

## 4. SMAG version 4

### 4.1. Description

SMAG aims to realize a self-retrospective assessing of your water management and governance process during the last 20 years.

Questions are:

- Which changes are important?
- Which dynamics could you analyse?
- Which stakeholders acting on it? How?

SMAG includes **4 steps**:



**STEP 1 – Mapping (SAME).** It is the same exercise than in the previous version of SMAG. The difference is participants don't use background map but a blank sheet. Legend and proposed elements are more detailed.

**STEP 2 -Most Significant Changes (SAME).** It is the same exercise than the previous version too.

**STEP 3 – Timeline (NEW).** The new time line includes 3 parts:

- Local context is all elements of the system which are on the local scale
- External context is all elements which are on the higher scale
- Social context is a part to represent stakeholders relationship

Firstly, participants must complete local and external context. Local context includes natural elements, uses and activities and local policies. External context comprises climate, regulatory framework and economic context. They must add element for each type of context. They can select in a proposed list or create an element. They add it on the poster and represent its evolution in the time which a legend. Then, they must draw causal link on the timeline. Finally, participants complete the “social context” with another legend. The next picture present the timeline.

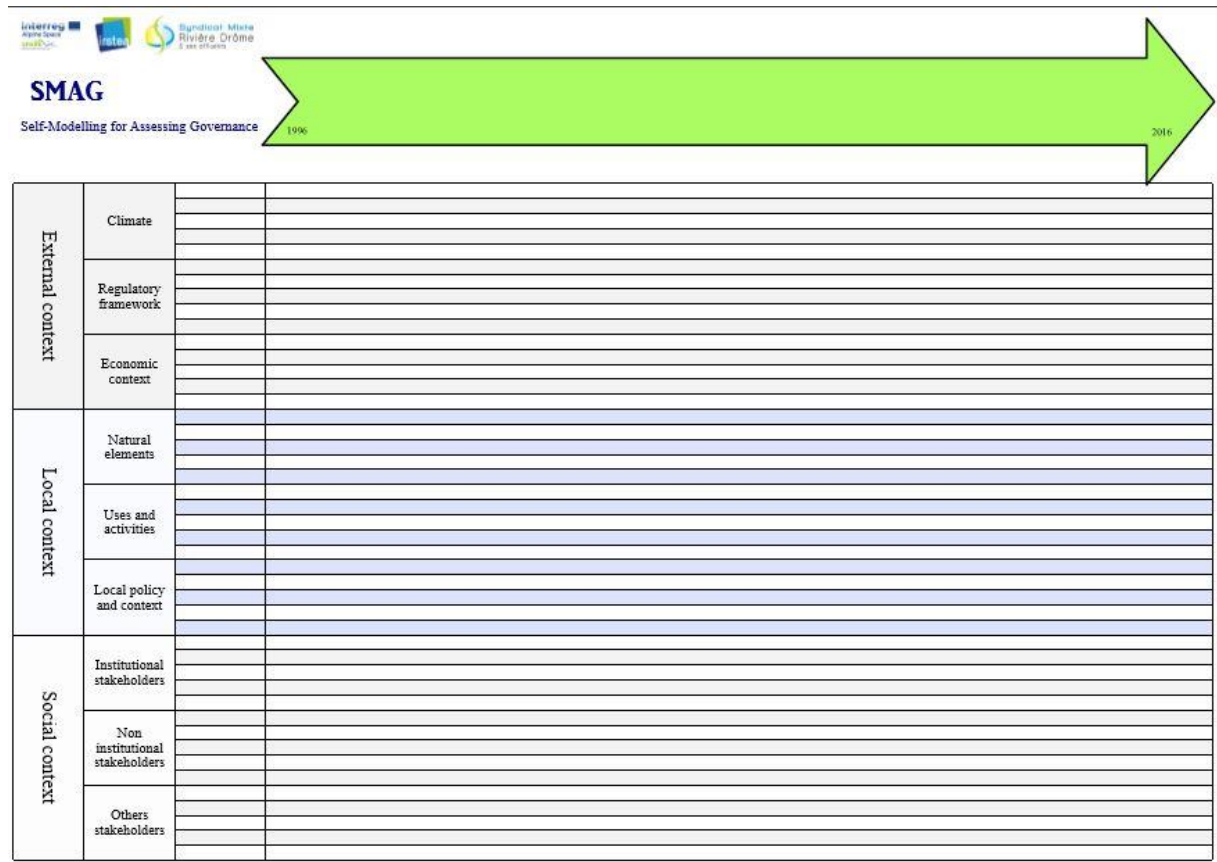


Figure 8: Timeline SMAG V4

**STEP 4 – CONCLUSION.** Participants select one success and one failure. Then they write collectively a short text to describe the time line to the other. A series of questions aims to open discussion about future.

#### 4.2. Test 5 (Allex, 6/07/16, SPARE 4 PCSs, 20 participants - 4 groups)

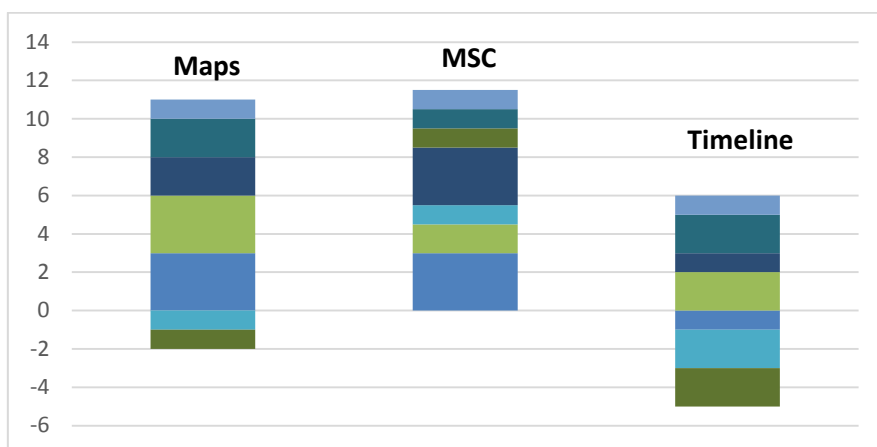
There were around 20 participants divided into 4 groups by case studies. The Inn river basin was not targeted because it was already tested (see test 4). There was a facilitator for each group.

#### Feedbacks from participants:

A few days after the workshop, participants were asked to fill in a questionnaire about their appraisal of the different methods presented during the workshop, including SMAG. The following figures present their answers.

	PROS	CONS
<b>SMAG</b>	<ul style="list-style-type: none"> <li>• Act and do</li> <li>• Useful to describe the catchment's history, events and decisions which defined the catchment's situation (++)</li> <li>• Useful to learn from the past and from past mistakes</li> <li>• Very clear meaning</li> <li>• Useful to have different steps that can be build up constructively (past to future)</li> <li>• Good insight in different views</li> </ul>	<ul style="list-style-type: none"> <li>• Not really useful from PPs and stakeholders (++)</li> <li>• Timeline complex to understand and explain (a lot of legends) (+++)</li> <li>• Takes a long time to come to conclusions</li> <li>• Not enough time dedicated to the exercise (++)</li> <li>• Advices was changing among person</li> </ul>

➔ The step of SMAG which was the most appreciated is most significant changes (MSC):

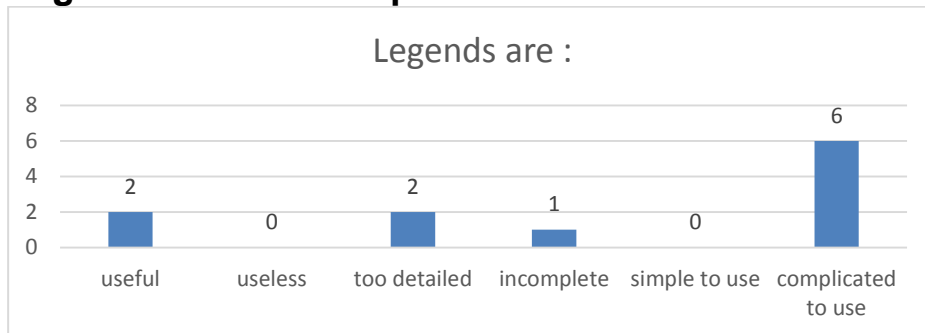


(Colours correspond to the answers provided by each participant)

➔ The timeline needs to be improved:



### → Legends must be simplified:



In general, participants asked for the instructions to be clarified. They mentioned that describing the expected result could help to understand quickly the workshop.

### 4.3. Improvements

**STEP 1 – Mapping.** One of the problem is most of the time elements appear on the territory as time pass. So participants draw the current situation and after they want use tracing paper to represents changes and they can not delete elements. So it seems more logical to start to draw the situation 20 years ago and represent on tracing paper evolution until the current situation. The second problem is the complexity of legend. There were not attractive and imposed so participants did not use it. To improve this exercise, order of drawing map is reversed and legend became more free and simple.

**STEP 2 -Most Significant Changes.** It could be any change but the goal of SMAG is to modelling change in water governance. To focus on the goal MSC become MSD (**Most Significant Decision**). Participants must propose, prioritise and select most significant choices/ decisions in their water governance process.

**STEP 3 – Timeline.** Participants cannot always assume their relationships and write it on the timeline. The new one is to describe role of stakeholders in the decision process. Are they leader, main actor, contributor, participant or/and objector?

**STEP 4 – CONCLUSION** The last exercise must be changed because questions are not pertinent.

## 5. SMAG Version 5

### 5.1. Description

See guidelines in the first part of this document

### 5.2. Test 6 (Montpellier, 25/08/16, Lez river basin, 8 participants)

Participants were a group of 8 persons who did not know one another. They didn't know well the case study either. So they imagined some events and tried to be one stakeholder: agricultural, conservation of nature, drinking water, water management or tourism. Time was missing to treat all the workshop (Only 1 hour). After a presentation about what is the beginning of the workshop and which map and most significant decision they should have got if they do IT, they started to complete the timeline. They did not finish it to try to start the last exercise. They was autonomous during the workshop. An instruction manual was provide for each participant.

#### **Feedbacks from participants:**

- Most participants criticized the fact that there is no facilitator. They think it is hard to start to complete the timeline. There is another problem if it is the same participant who write on the timeline during all the workshop. He will disturb self-expression of others.
- They explain which point are not clear on the instruction manual like definition of external and local context. Schema of timeline is not clear and to complex.
- They request for example on the timeline for each type of element and for a more detailed explanations about goals of the workshop.
- Most of them think it is too hard for real stakeholder to assume their relationships with other in front of them.

### 5.3. Test 7 (Linz, 21/11/16, Steyr river basin, 7 participants)

The SMAG workshop was held with the Steyr pilot group. Seven participants with comprehensive knowledge on the history of the river basin identified the following key decisions (most significant changes) in water governance history:

- Hydropower plant exploitation: ongoing since ~ 1900 (e.g. hydropower plant Steyrdurchbruch 1908, dam Klaus 1975)

- Designation of protected areas (e.g. Nationalpark Kalkalpen 1997, several Natura 2000 sites and nature sanctuaries)
- Development of soft tourism
- Construction of the highway 2004
- Development to a holistic water management (area wide wastewater treatment since, change of perspectives to a more ecologically oriented water management since 1991)

### **Feedbacks from participants:**

#### According the goal of SMAG:

The SMAG process was experienced to be very helpful to discuss the historic development in the catchment, very useful to get a common understanding of the relevant factors of water management and river status development and to get a unified knowledge basis for younger and older participants.

#### Preparation and guidelines:

The guidelines give a good understanding what to do, whom to invite, how to do it, how and what to document – thanks! – very valuable!

#### Additional suggestions:

- Preparation of the session is needed; the participants have expected that facts and figures about the catchment are available during the session: what are the main rivers, when was the highway built, when the largest waste water treatment plants or hydropower plants constructed, how large is the national park, since when does it exist, have the regulations in the national park been changed and when ....

Thus looking up of general facts, dates and figures in advance, looking up inventories, checking opening dates of plants and infrastructure, doing google research on the homepages of the municipalities (chronics etc.) is strongly advisable; then it's easier and more accurate to put the facts, which are decided during the session as relevant, on the timeline.

However what is really relevant for the river catchment development is discussed, selected and decided on only in the session by the participants; no preselection before the session – with the facts and figures the participants are only serviced and assisted when asked for.

- Printouts of general maps with the main rivers, catchment borders, national parks, municipalities, etc. make it easier to discuss and locate the main drivers for river

development, make it quicker to allocate, draw and bring in further information during the session.

#### 5.4. Test 8 (Nova Gorica, 24/01/17, Soča river basin, 7 participants)

SMAG was carried out with the Pilot Group (PG). We have invited experts that were active on Soča river in the past from Upper Soča valley until the lower part of the river. Two participants had confirmed the participation, but they didn't arrive at all. We followed the SMAG guidelines prepared by IRSTEА and started the method with the drawing of maps. We have identified major spatial changes and wrote the year when the changes occurred. We identified the Most Significant Decisions (MSD) and wrote the causes and consequences that led to present governance. We proceeded with the timeline, where we have shown the relations between MSD's with the local and context. The conclusion part was intended to fill in the questionnaire and talk about today's governance.

The main result of SMAG was to get a clear picture of the past governance of Soča river that influenced river management until today. It was interesting to see other view points on management. We also wrote some suggestions on improving the SMAG method.

#### Feedbacks from participants:

Steps of SMAG	Appraisal -3 → +3	"Pros"	"Cons"	Comments, questions, requests, needs, follow-ups
Map	+3	Drawing of the past spatial changes; Good for refreshing the historical memory;	/	/
MSD	+2	Good overview of the past stakeholders and their roles in the governance; Wide picture of causes and consequences that lead to today's state of the river;	/	The Annex 1 could contain also Most Significant Events. An earthquake/landslide is not a decision but is an event that can play a significant role in the governance.
Timeline	+1	Timeline created a good picture of MSD through the history	Too much MSD made timeline with too much	We draw the decades additionally with the purpose to keep it short, simple and transparent (one decade could



			information; Stakeholders list should be placed somewhere where you can write them close to the MSD;	have more MSD's, other none); It would be better to focus only on one MSD on the timeline – it would make a better picture of the state and relations between stakeholders; The empty space for writing down the stakeholders is only on the left side of the table. In case that you have more stakeholders for several MSD there is not enough space to write them down – maybe a separate compartment to write them down by every MSD; Improvement of criteria (external and local context in the table)
[Optional] Decision Analysis	/	/	/	/
Conclusion	+3	Productive dialog between different stakeholders	/	

Table 7 : Feedbacks from test 8

#### Suggestions to improve the workshop

The SMAG workshop was successful. With some minor changes and improvements it could be a great tool for learning about the past water management. The experiences are then transferred and compared with today's river governance.

### 5.5. Alter-Eau conference (Limoges)

#### Feedbacks from participants:

- There is a tension between the generic and abstract character of the materials used in this type of tool. On the one hand, the "singular" materials that are created by the participants (such as cards) create a stronger attachment on the part of the participants. On the other hand, the "generic" materials in which categories are pre-proposed (such as the timeline, for example) lead to the risk that we lose something in the participants' commitment.
- be careful not to confuse scale and level!. The current representation of the timeline with external context on top and local context below suggests that the local is always subject to external constraints and that the higher it comes from the higher the injunctions are strong. There are different forms of power at all levels.

- Why are we talking about decisions and not events? (I replied that initially the MSCs had been chosen but that it represented more the management than the governance and that therefore we had chosen to focus on the decisions)
- Is SMAG allowed to represent non-decisions or non-events, such as decisions that would not be questioned (I replied that SMAG represented non-participation in decision-making and that to some extent the horizontal arrows represented decisions not challenged but could perhaps be added as a point of discussion in the debriefing)
- Does SMAG represent the "political culture" of the different cases? ( I replied that SMAG finally provided only the empty box / box and that the tool could adapt to the Diversity of the different cases)
- Currently, everyone is moving, there are few people who remain in the same territory for 30 years. Will it really always be possible to find candidates to do SMAG? (I replied that it was a constraint, but that potentially SMAG could also be done with people who know the terrain well, like researchers, without necessarily having lived there for 30 years, even though we were aware that it would probably not produce the same result)
- it is often observed on the grounds that a narrative of decisions has been made, that there is an official discourse and the risk is that the framing of SMAG reinforces the legitimacy of this official discourse and the structures that produce it.
- Do you have the objective of creating an aggregated indicator, for example, of the basin's "decisionability"? (I replied that no, that I did not really believe in aggregated indicators and that I think the tool's value was to highlight and discuss the different perspectives on basin governance)

## 5.6. Future improvements

This is a list of improvement which could be realised to improve SMAG method and process:

- If there is no facilitator: clear guideline about how participants can share speaking time and how they can do together the workshop without conflict.
- About the instruction manual: correct definition of goals and contexts, change schema of timeline and explain it.
- About timeline: choose between colours and pictures to represent elements, add a typology of positive and negative effect to causal link, add examples to each type of element of context and maybe add the legend on the poster.
- (See also feedbacks from tests 7 and 8 + Alter-Eau Conference)